RUGGED TRUE RMS MULTIMETER WITH NCV DETECTION AND LOW-Z MODE

USER'S MANUAL

DMM570

Please read this manual carefully and thoroughly before using this product.

TABLE OF CONTENTS

Introduction 3
Key Features 3
What's in the Box 4
Product Overview . . . . . 4 – 5
Safety Instructions . . . . . 6 – 8
Setup Instructions 9
  Install Battery 9
Operating Instructions . . . . . 9 – 19
  General Instructions . . . . . 9 – 12
    Ranging Options . . . . . 9 – 10
    Holding Readings 10
    Tracking Maximum and Minimum Readings . . 10
    Making Relative Measurements . . . . . 10 – 11
    Disabling Auto Power Off (APO) 11
    Using the Analog Bar Graph 11
    Turning on the Backlight 12
  Measuring AC or DC Current . . . . . 12 – 13
  Measuring AC or DC Voltage . . . . . 13 – 15
    Using the Non-contact Voltage Detector . . 14 – 15
    Operating in Lo-Z Mode 15
  Measuring Resistance . . . . . 15 – 16
  Checking for Continuity 16
  Checking the Integrity of a Diode . . . . . 16 – 17
  Measuring Capacitance 17
  Measuring Frequency and Duty Cycle 17
  Measuring Temperature . . . . . 18 – 19
Specifications . . . . . 18 – 21
Operating & Maintenance Tips 21
Warranty Information . . . . . 22 – 23
Return for Repair Policy 23

INTRODUCTION

Thank you for purchasing General Tools & Instruments' (General's) DMM570 Rugged True RMS Multimeter with NCV Detection and Low-Z Mode. Please read this user's manual carefully and thoroughly before using the instrument.

The DMM570 is designed for use in an industrial setting by HVAC/R contractors, building maintenance technicians, MRO (maintenance, repair and operations) personnel at process and power plants, electricians and electrical/electronic technicians.

KEY FEATURES

- 19 functions, 48 ranges
- Measures AC/DC voltage, AC/DC current, resistance, capacitance, frequency and duty cycle
- Also measures temperature from -58° to 1112°F (-50° to 600°C) with included "K" type stem thermocouple probe
- Checks continuity and diode integrity
- True RMS measurements
- IP54 water/oil/dust protection
- 6 ft. (1.8m) drop-resistant
- Designed to meet CAT III 1000V, CAT IV 600V safety standard
- Auto or manual ranging
- Non-contact voltage (NCV) detection
- Lo-Z low-impedance filter mode; avoids "ghost" readings due to capacitive coupling of voltage from power supply conductors onto adjacent unused conductors
- Backlit 3-3/4 digit (6,600 count) dual readout LCD
- 66-segment analog bar graph at bottom of LCD
- Hold, Max, Min, Rel (Zero) display options
- 15-minute Auto Power Off (can be disabled)
- Magnetic hanging strap
- 3 year limited warranty

WHAT'S IN THE BOX

The meter is supplied in a nylon carrying pouch inside an illustrated box. Also inside the pouch are a set of 1000V/10A-rated double-insulated test leads with screw-on alligator clips, a "K" type stem thermocouple probe and plug adapter, a magnetic hanging strap, (1) "9V" battery and this user's manual.

PRODUCT OVERVIEW

Fig. 1 shows the labels and positions of the controls, indicators and physical structures of the DMM570. Fig. 2 shows all possible indications on the LCD. Familiarize yourself with the functions and meanings of these controls, indicators and connectors before moving on to the Setup Instructions and Operating Instructions.

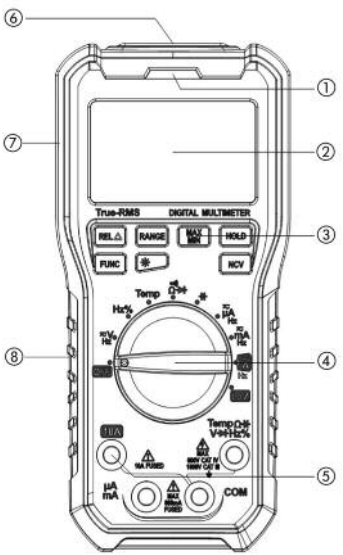


Fig. 1. The controls, indicators and physical structures of the DMM570.

① Non-contact voltage (NCV) visual indication (red LED)

② LCD

③ Function buttons:

- **REL**Δ: Multi-function button. Used to 1) Enter relative measurement mode (see p. 10) and 2) Disable the meter's Auto Power Off function (see p. 11)

- **RANGE**: Switches between Auto ranging and Manual ranging modes (see p. 9)
- **MAX/MIN**: Enters Max/Min mode (see p. 10), in which the secondary display shows the largest and smallest values of any parameter since switching to measure it.
- **HOLD**: "Freezes" the primary and secondary readouts (but not the analog bar graph at the bottom of the LCD)
- **FUNC**: Multi-function button. 1) With the rotary function switch in the ≂V, μA, mA or A position, selects AC or DC voltage (see p. 13) or current (see p. 12); 2) With the rotary function switch in the **Temp** position, selects °F or °C unit (see p. 18); 3) With the rotary function switch in the Ω position, selects resistance measurement, continuity checking or diode integrity verification (see p. 15 – 17)
- ☀ Turns the backlight on and off
- **NCV**: Activates the non-contact voltage sensor (see p. 14)

④ Rotary function switch

⑤ Input jacks: **uA/mA** jack is used to measure currents with amplitude <600mA; **10A** jack is used to measure currents with amplitude from 600mA to 10A

⑥ NCV sensor

⑦ Battery compartment (on back)

⑧ Flip-up stand (on back)

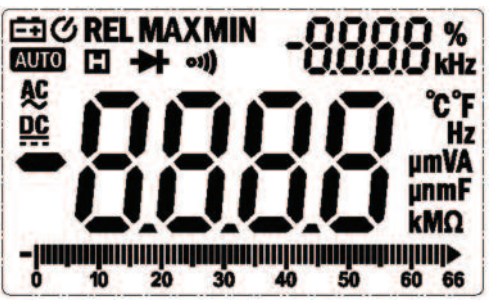


Fig. 2. All possible display indications

SAFETY INSTRUCTIONS

⚠⚠ Warning ⚠⚠

To avoid possible electric shock or personal injury, and to avoid damaging the meter or the equipment under test:

- Do not use the meter in any way not detailed in this manual or the meter's safety features may be compromised.
- Before using the meter, inspect the case. Do not use the meter if it is damaged. Look for cracks or missing plastic. Pay particular attention to the insulation around the connectors.
- ⚠**WARNING** Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity. Replace damaged test leads before using the meter.
- Verify the meter's operation by measuring a known voltage. Do not use the meter if it operates abnormally. Protection may be impaired. When in doubt, have the meter serviced.
- ⚠**WARNING** Do not apply more than the rated voltage, as marked on the meter, between the Temp Ω V Hz% and **COM** jacks or between any jack and ground. Also do not input more than the rated current, as marked on the meter, through the **10A** or **uA/mA** jack.
- ⚠**WARNING** Do not measure voltages above 1000V in Category III installations.
- ⚠**WARNING** Do not attempt to measure voltage with the rotary function switch in the Ω, , **μA**, **mA**, **A** or **Temp** position. Never attempt to measure current with the rotary function switch in the Ω, or **Temp** position.
- Use caution when working with voltages above 42VAC$_{RMS}$, or 60VDC. These voltages pose a shock hazard.
- Use the proper terminals, function and range for all measurements.

- ⚠**WARNING** Do not operate the meter around explosive gas, vapor, or dust.
- ⚠**WARNING** When using the probes, keep your fingers behind the finger guards. Do not touch the metal probes of the test leads when making a measurement.
- When making connections, connect the black (–) test lead before connecting the red (+) test lead; when disconnecting, disconnect the red (+) test lead before disconnecting the black (–) test lead.
- Disconnect circuit power and discharge all high-voltage capacitors before measuring/testing resistance, continuity, diodes, or capacitance.
- For all DC functions in both auto and manual ranging mode, to avoid the risk of shock due to possible improper reading verify the presence of any AC voltages by first using the AC function. Then select a DC voltage range equal to or greater than the AC range.
- Before measuring current, turn off power to the circuit before connecting the meter.
- Do not operate the meter with the case (or part of the case) removed.
- Use only (1) "9V" battery, properly installed in the battery compartment, to power the meter. Do not use rechargeable batteries.
- Replace the battery as soon as the low battery indicator " " appears. Operated with a weak battery, the meter might produce false readings that could lead to electric shock and personal injury.
- Remove the test leads from the meter before opening the meter case or battery compartment.

Electrical Symbols Used On the Meter and In This Manual

Symbol	Description	Symbol	Description
	AC (Alternating Current)		Fuse
	DC (Direct Current)		Double Insulated
	Caution, risk of electric shock. Hazardous voltage.		Risk of danger. Important information. Refer to the manual.
	Battery (Low battery) when shown on display		Earth ground
	Diode		Continuity Beeper
	AC or DC	Ω	Resistance
	Capacitance		Application and removal from hazardous live conductors permitted
CAT III	For measurements made on building equipment such as distribution panels, feeders and short branch circuits, and on lighting systems in large buildings.	**CAT IV**	For measurements on circuits connected directly to the source of power for a given building (for example, on the cable to the power transformer ahead of a building's circuit breakers). Very high levels of energy available at CAT IV level make arc flash possible.
	Auto Power Off function enabled	Lo-Z	Low-impedance mode; avoids "ghost" readings due to capacitive coupling of voltage from power supply conductors onto adjacent unused conductors

SETUP INSTRUCTIONS

INSTALL BATTERY

The battery compartment of the DMM570 is located at the back of the meter.

To open the compartment, use a small Phillips-head screwdriver to remove the single screw securing the battery compartment cover/flip-up stand. Be careful not to lose the small screw. Put the cover/stand to the side.

Plug the included "9V" battery into the wired socket inside the compartment. The terminals of the battery and the socket mate in only one way, with the smaller male terminal plugging into the larger female terminal.

Secure the battery compartment by replacing the cover/stand and reinstalling and tightening the Phillips-head screw.

OPERATING INSTRUCTIONS

GENERAL INSTRUCTIONS

The DMM570 provides several functions that can be applied to measurements and displays of multiple parameters.

Ranging Options

By default, the meter automatically enters Auto Ranging mode when powered on. In this mode, the meter chooses the measurement range that maximizes the resolution of its current, voltage, resistance, capacitance and frequency measurements. The term **AUTO** indicates operation in Auto Ranging mode.

To switch to Manual Ranging for any parameter other than temperature, press the **RANGE** button once. This will make the **AUTO** term disappear and cause the meter to enter the broadest full-scale range available for that parameter (see the Specifications section beginning on p. 18 for a list of the measurement ranges available for each parameter).

Once the meter is in manual ranging mode, each subsequent press of the **RANGE** button reduces the full-scale range by an order of magnitude (a factor of 10). For example, pressing the **RANGE** button with the meter

operating in the 0 to 660µF full-scale manual range reduces the full-scale range to 0 to 66µF (and improves measurement resolution). The next press of the button reduces the range to 0 to 6.6µF. When the smallest full-scale range has been reached, the next press of the **RANGE** button switches the meter back to the largest full-scale manual range for the parameter being measured.

To exit Manual Ranging mode and return to Auto Ranging mode, press and hold the **RANGE** button.

Holding Readings

Pressing the **HOLD** button "freezes" the values on both the primary and secondary readouts and causes an H icon to appear at the top left of the LCD. Pressing the button again releases the hold and removes the H icon. While readings are held, the analog bar graph at the bottom of the LCD continues to track real-time readings of the parameter being measured.

Tracking Maximum and Minimum Readings

Pressing the **MAX/MIN** button once switches the secondary readout to show the *largest* value of the parameter being measured since entering that measurement mode. The primary display and the analog bar graph at the bottom of the LCD will continue to show real-time readings.

Pressing the **MAX/MIN** button a second time switches the secondary readout to show the *smallest* value of the parameter being measured since entering that measurement mode. The primary display and the analog bar graph at the bottom of the LCD will continue to show real-time readings.

Pressing the **MAX/MIN** button a third time resumes "normal" display operation, with different values in the primary and secondary readouts.

When the **MAX/MIN** button is pressed, the meter will automatically exit Auto Ranging mode and enter Manual Ranging mode using the full-scale range in effect at that moment.

Making Relative Measurements

Pressing the **REL**Δ button during measurement of current, voltage, resistance or capacitance freezes the value being measured at that instant on the secondary

(upper) readout. The term **REL** will appear at the upper left of the LCD to indicate operation in this special mode. In **REL** mode, the primary (lower) readout shows the *difference* between ongoing measurements and the frozen value. **REL** mode is useful for tracking changes in dynamic processes or deviations from baseline readings.

When the **REL**Δ button is pressed, the meter automatically exits Auto Ranging mode and enters Manual Ranging mode using the full-scale range in effect at that moment.

To exit **REL** mode, press the **REL**Δ button again.

Disabling Auto Power Off (APO)

By default, the meter automatically powers itself off if no front-panel button is pressed within any span of 15 minutes. Fifteen seconds before the end of this 15-minute period, the meter announces that the APO function is about to engage by sounding a sequence of 3 double beeps, followed by a long beep.

Once the APO function has activated and powered the meter off, you can "wake the meter up" simply by turning the rotary function switch to a different position.

The ⏲ icon on the left side of the LCD indicates that the APO function is enabled. To disable the APO function, you must power on the meter in a special way—by pressing and holding the **REL**Δ button while turning the rotary function switch to any position other than **OFF**. If the meter is powered on in this way, the ⏲ icon will not appear. If the meter is left unattended with APO disabled, it will remain powered on until its battery discharges (typically, several days later).

Using the Analog Bar Graph

The bar graph at the bottom of the LCD (see below) provides an analog representation of every measurement shown in digital form on the primary readout above it.

The key feature of the bar graph is its fast response time. It can reflect a change in a measured value 10 times more quickly than the digital readout can. Accordingly, it is useful for tracking parameters that change very rapidly (a voltage or current, for example).

Turning On the Backlight

Pressing the ☀ button turns on the LCD's bright white backlight, making measurements much easier to read in dark spaces.

To prevent the backlight from draining the meter's battery, the backlight automatically extinguishes in 60 seconds.

MEASURING AC OR DC CURRENT

⚠⚠ Warning ⚠⚠

Do not attempt to measure: 1) currents larger than 600mA through the **uA/mA** jack; 2) currents larger than 10A through the **10A** jack continuously for more than 30 seconds; pause 1 minute after each measurement of such a large current.

Remove power from the circuit to be tested and discharge all capacitors.

(1) Turn the rotary function switch to the $\tilde{\overline{\mu A}}$, $\tilde{\overline{mA}}$ or $\tilde{\overline{A}}$ position, depending on the current amplitude you expect to encounter. If you are unsure what amplitude to expect, select the $\tilde{\overline{A}}$ position.

(2) Press the **FUNC** button to select either AC or DC current, as indicated by the $\underline{\sim}$ or $\underline{\overline{\overline{\over

selected current measurement mode. If this is the case, move the rotary function switch to the next-highest position among $\overline{\overline{\mu}}$A, $\overline{\overline{m}}$A and $\overline{\overline{A}}$.

Notes:

A. During measurements of AC current, the primary readout shows the amplitude of the current while the secondary readout in the upper right corner shows the frequency of the current.

B. General's FX3000 Flex Clamp Adapter makes it possible to enclose a thick or hard-to reach conductor, a bundle of conductors, or a busbar carrying up to 3000A. The accessory uses induction to convert current readings to millivolt values that can be displayed by the DMM570. For more information or to order, visit www.generaltools.com and enter "FX3000" in the SEARCH box.

MEASURING AC OR DC VOLTAGE

⚠⚠ Warning ⚠⚠

Do not measure voltage higher than 600V. Doing so may damage the meter's internal circuitry. If the voltage is over 1000V, the beeper will sound continuously, indicating an over-range measurement.

(1) Turn the rotary function switch to the ≂V position. By default, when the switch is initially set to this position the meter is configured to measure DC voltage (as indicated by the $\underline{\underline{DC}}$ display icon on the left side of the LCD). To measure AC voltage, press the **FUNC** button to change the icon to $\underline{AC}$.

(2) Plug the black test lead into the front-panel **COM** jack and the red test lead into the $\overset{Temp\Omega}{V\blacktriangleright\!|\!-Hz\%}$ jack.

(3) Touch the black test lead to the lower-potential point of the circuit under test, and the red test lead to the higher-potential point.

(4) Read the measured voltage on the display. When measuring DC voltage, if the test leads are reversed a minus sign will appear at the left of the displayed value.

Note:

During measurements of AC voltage, the primary readout shows the amplitude of the voltage while the secondary readout in the upper right corner shows the frequency of the voltage.

Using the Non-contact Voltage Detector. The DMM570's NCV detector provides a safe (non-contact) way to check whether a line, cable or AC outlet is "hot" (energized). At the top of the meter (Fig. 1, Callout 6) is an NCV sensor that can detect from a short distance the electromagnetic field created by AC voltage. If voltage is detected, the meter produces audible and visual alarms (a beeping sound, and a flashing red light from an LED near the top of the front panel (Fig. 1, Callout 1)).

Even unloaded AC circuits generate electromagnetic fields. Although these fields are extremely weak, their constantly changing nature means that they generate some current. A sensitive NCV detector can sense this current via induction, in much the same way that a sensitive radio receiver can sense weak radio waves.

NCV detectors cannot detect DC voltages, such as those present in automotive electrical systems. In addition, the DMM570 typically cannot detect 120VAC from a distance of more than 0.25 in. (6.2mm), and never through a wall or metal conduit.

⚠⚠ Warning ⚠⚠

The NCV detector in the DMM570 is designed to indicate the presence of AC voltage with an amplitude of $110VA_{CRMS}$ or greater. However, *do not* assume that the absence of a positive indication means that the circuit under test is de-energized (not "hot"). Do not rely solely on NCV detection to determine the presence of voltage in a wire. NCV detection may be affected by the design of the outlet, the type of wiring insulation and other external factors. Also be aware that "false positive" NCV indications may be triggered by connection of the meter's test leads to a voltage source or by external interference from a flashlight, motor or other electrical device.

Whenever you have reason to suspect that a line or outlet is "hot", confirm your suspicion by measuring the voltage of the line or outlet using the test leads with the meter's rotary function switch in the ≂V position.

To check whether a line, cable or AC outlet is "hot" (energized), touch it with the top of the meter or bring the top within 1/4 inch of it while pressing and holding the

front-panel **NCV** button. If the beeper sounds repeatedly and the red LED flashes rapidly, the line or outlet is energized.

The NCV detector works with the rotary function switch in any position.

Operating in Lo-Z Mode. The DMM570 normally presents a high input impedance of 10MΩ to circuits to which it is connected by the test leads. However, the meter can also be operated in a mode that presents a much lower impedance of 400kΩ.

This mode is useful for avoiding "ghost" readings resulting from capacitive coupling of voltage from power supply conductors onto adjacent unused conductors.

To operate in this mode, turn the rotary function switch to the **Lo-Z** position and follow the above instructions for measuring AC voltage.

MEASURING RESISTANCE

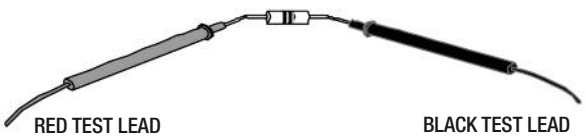
⚠⚠ Warning ⚠⚠

To avoid electrical shock or damage to the meter when measuring the resistance or checking the continuity of a circuit, make sure power to the circuit is turned off and all capacitors are discharged.

(1) Turn the rotary function switch to the position. By default, when the switch is initially set to this position with the test leads not plugged in the meter will automatically 1) enter resistance measurement (indicated by the term **M**Ω at the lower right of the LCD) and Auto Ranging modes and 2) display **O.L** (indicating an open circuit) on the primary readout.

(2) Plug the black test lead into the front-panel **COM** jack and the red test lead into the jack.

(3) Measure the resistance by touching or clipping the test leads to the desired test points of the circuit or to the terminals of a component, as shown below.



(4) Read the measured resistance on the display. If the measured resistance value is greater than 66MΩ, **0.L** will appear on the primary readout. The meter will take a few seconds to stabilize when measuring resistances greater than 1MΩ.

CHECKING FOR CONTINUITY

(1) Turn the rotary function switch to the position. Press the **FUNC** button once to select the continuity check function. Until the test leads are plugged in, the primary readout will show **OL.**, with the icon of a continuity beeper ( ) above it.

(2) Plug the black test lead into the front-panel **COM** jack and the red test lead into the jack.

(3) Touch or clip the test leads to any two points of the circuit. The resistance between those two points will be shown on the primary readout. If the resistance is <30Ω, the beeper will sound continuously. If there is no continuity (an open circuit or a resistance greater than 600Ω between the two points), **0.L** will appear on the primary readout.

CHECKING THE INTEGRITY OF A DIODE

(1) Turn the rotary function switch to the position. Press the **FUNC** button twice to select the diode check function. Until the test leads are plugged in, the primary readout will show **.OL**, with the icon of a diode ( ) above it.

(2) Plug the black test lead into the front-panel **COM** jack and the red test lead into the jack.

(3) Connect the red test lead to the anode (positive terminal) of the diode to be tested and the black test lead to its cathode (negative terminal), as shown below.

(4) Read the diode's forward bias voltage drop on the display. A silicon diode typically has a forward bias voltage of 0.7V. A germanium diode typically has a forward bias voltage of 0.3V. A **0V** reading in both directions indicates a shorted diode. An **.OL** reading

indicates an open diode. In either case, the diode is defective and should be replaced.

MEASURING CAPACITANCE

To avoid possible damage to the meter or other equipment, turn off the power source and discharge all high-voltage capacitors.

(1) Disconnect the capacitor from power.

(2) Short the capacitor's terminals to discharge it.

(3) Disconnect any resistors between the terminals of the capacitor.

(4) Turn the rotary function switch to the ⊣⊢ position. Until the test leads are plugged in, the primary readout will show **0.000 nF**.

(5) Plug the black test lead into the front-panel **COM** jack and the red test lead into the Temp Ω V Hz% jack.

(6) Connect the test leads to the terminals of the capacitor.

(7) Read the measured capacitance on the display.

MEASURING FREQUENCY AND DUTY CYCLE

As described earlier, the DMM570 automatically measures the frequency of measured AC currents and voltages and displays them on the secondary readout. However, the range of frequencies that can be measured and displayed in this way is limited to 10Hz to 1kHz. Using the **Hz%** position of the rotary function switch expands the range of measurable frequencies to 10Hz to 66MHz, while providing better measurement resolution (via multiple ranges) and greater measurement accuracy.

To measure frequency in this way:

(1) Turn the rotary function switch to the **Hz%** position.

(2) Plug the black test lead into the front-panel **COM** jack and the red test lead into the Temp Ω V Hz% jack.

(3) Touch or clip the test leads to the voltage source or between loads.

(4) Read the measured frequency on the primary readout and the duty cycle (as a percentage) on the secondary readout.

MEASURING TEMPERATURE

To measure the temperature of a solid, liquid or gas:

(1) Turn the rotary function switch to the **Temp** position. The primary readout will show spurious readings until a thermocouple probe is plugged into the meter's front-panel jacks.

(2) Plug the included plug adapter into the red and black jacks at the bottom front of the meter. Make sure to insert the + (positive) plug of the adapter into the Temp Ω V Hz% jack and the **COM** plug into the **COM** jack.

SPECIFICATIONS

Parameter or Feature/Function	Attribute
AC voltage (True RMS); with rotary function switch in $\tilde{\overline{A}}$ or **Lo-Z** position	Measurement ranges
	Measurement accuracy
	Overload protection
DC voltage	Measurement ranges
	Measurement accuracy
	Overload protection
AC current (True RMS)	Measurement ranges
	Measurement accuracy
	Overload protection
DC current	Measurement ranges
	Measurement accuracy
	Overload protection
Resistance	Measurement ranges
	Measurement accuracy
Frequency (with rotary function switch in **Hz%** position)	Measurement ranges
	Measurement accuracy
	Overload protection

(3) Plug the included “K” type thermocouple (or a different “K” type thermocouple) into the adapter. Make sure to insert the slightly wider blade of the thermocouple into the – (negative) slot of the adapter.

(4) To measure a surface temperature, firmly attach the tip of the thermocouple to the surface. To measure the temperature of a liquid or gas (including ambient air), make sure that the tip of thermocouple is within the fluid.

(5) Read the measured temperature on the primary readout. Use the **FUNC** button to toggle between °F and °C units.

	Specification
	0 to 660mV/6.6V/66V/600V/750V
	±(1.2% of reading + 5 digits) in 6.6V and 66V ranges; ±(1.5% of reading + 5 digits) in other ranges
	250VDC/VAC$_{RMS}$ in 660mV range; 600VDC/VAC$_{RMS}$ in other ranges
	0 to 660mV/6.6V/66V/600V/1000V
	±(0.8% of reading + 3 digits) in 660mV and 1000V ranges; ±(0.5% of reading + 5 digits) in other ranges
	250VDC/VAC$_{RMS}$ in 660mV range; 600VDC/VAC$_{RMS}$ in 660mV, 6.6V, 66V and 600V ranges
	0 to 660µA/6.6mA/66mA/660mA/10A
	±(3% of reading + 5 digits) in 10A range; ±(1.5% of reading + 5 digits) in other ranges
	600mA/1000V fuse with rotary function switch in $\overline{\mu A}$ or $\overline{mA}$ position; 10A/1000V fuse with rotary function switch in $\overline{A}$ position
	0 to 660µA/6.6mA/66mA/660mA/10A
	±(2% of reading + 5 digits) in 10A range; ±(1% of reading + 5 digits) in other ranges
	600mA/1000V fuse with rotary function switch in in $\overline{\mu A}$ or $\overline{mA}$ position; 10A/1000V fuse with rotary function switch in $\overline{A}$ position
	0 to 660Ω/6.6kΩ/66kΩ/660kΩ/6.6MΩ/66MΩ
	±(1.5% of reading + 5 digits) in 66MΩ range; ±(0.8% of reading + 5 digits) in other ranges
	10Hz to 66Hz/660Hz/6.6kHz/66kHz/660kHz/6.6MHz/66MHz for 3V peak-to-peak AC inputs
	±(1.5% of reading + 5 digits)
	250VDC/VAC$_{RMS}$

Parameter or Feature/Function	Attribute
Frequency (with rotary function switch in ≂v position)	Measurement ranges
	Measurement accuracy
Capacitance	Measurement ranges
	Measurement accuracy
Continuity	Open circuit voltage
	Threshold
Diode integrity	Reverse DC voltage
	Forward DC current
Duty cycle	Measurement range
	Measurement accuracy/ resolution
Temperature	Measurement range
	Measurement accuracy (excluding thermocouple)
Overload protection level in resistance, frequency, continuity, diode integrity and capacitance modes	
Input impedance	
Sampling time	
Safety rating	
Water/dust/oil protection level	
Display	No. of digits
	Maximum count
Auto power off trigger	
Operating temperature	
Storage temperature	
Maximum altitude	
Power source	
Dimensions	
Weight (including battery)	

Note: Accuracy values are stated for an operating temperature between 64° and 82°F (18° and 28°C). All accuracy specifications must be derated (increased) by 5.5% for each degree F of operating temperature outside this range.

For example, an accuracy specification of ±3% between 64°F and 82°F would be derated to:

	Specification
	10Hz to 66Hz/660Hz/6.6kHz/10kHz for inputs >0.2VAC
	±(1.5% of reading + 5 digits)
	0 to 6.6nF/66nF/660nF/6.6µF/66µF/660µF/6.6mF/66mF
	±(4% of reading+ 5 digits) in 6.6nF, 6.6mF and 66mF ranges; ±(3% of reading+ 3 digits) in other ranges
	~1.2V
	≤ 30Ω
	~3.2V
	~1mA
	10 to 95%
	±2%/0.1%
	32° to 1832°F (0° to 1000°C)
	±(1% of reading + 3 digits)
	250VAC/DC_{RMS}
	10MΩ in all modes except Lo-Z (400kΩ)
	400msec for LCD and 40msec for analog bar graph in all modes except AC and DC current (1sec for LCD and 400msec for analog bar graph)
	CAT III 1000V, CAT IV 600V
	IP54
	3-3/4
	6600
	15 minutes of front-panel inactivity
	32° to 104°F (0° to 40°C)
	14° to 122°F (-10° to 50°C)
	6562 ft. (2000m)
	(1) "9V" battery
	6.9 x 3.3 x 2.1 in. (176 x 84 x 54mm)
	13.4 oz. (380g)

- **±3.165%** (±3% + (3% x 5.5% x 1)) **for operation at 63°F and 83°F** (one degree outside the range)
- **±3.33%** (±3% + (3% x 5.5% x 2)) **for operation at 62°F and 84°F** (two degrees outside the range)
- **±3.495%** (±3% + (3% x 5.5% x 3)) **for operation at 61°F and 85°F** (three degrees outside the range) · etc.

OPERATING & MAINTENANCE TIPS

When the icon appears at the upper left of the LCD, it's time to replace the "9V" battery that powers the meter (although measurements will remain valid for several hours after the icon first appears). To replace the battery, follow the instructions on p. 9.

Do not operate the DMM570 in the presence of a flammable or explosive gas or near an arc welder or induction heater.

After subjecting the meter to a large change in ambient temperature, wait at least 30 minutes before making measurements to guarantee the accuracy of readings.

Remove the battery when storing the meter or when you do not expect to use it for an extended period of time (months rather than weeks).

Do not disassemble the DMM570 or immerse it in water.

WARRANTY INFORMATION

General Tools & Instruments' (General's) DMM570 Rugged True RMS Multimeter with NCV Detection and Low-Z Mode is warranted to the original purchaser to be free from defects in material and workmanship for a period of three years. Subject to certain restrictions, General will repair or replace this instrument if, after examination, the company determines it to be defective in material or workmanship. The warranty period begins on the date of purchase. You are encouraged to register your product online. General will extend your warranty an additional 60 days if you register at www.generaltools.com/ProductRegistry.

This warranty does not apply to damages that General determines to be from an attempted repair by non-authorized personnel or misuse, alterations, normal wear and tear, or accidental damage. The defective unit must be returned to General Tools & Instruments or to a General-authorized service center, freight prepaid and insured.

Acceptance of the exclusive repair and replacement remedies described herein is a condition of the contract for purchase of this product. In no event shall General be liable for any incidental, special, consequential or punitive damages, or for any cost, attorneys' fees, expenses, or losses alleged to be a consequence of damage due to failure of, or defect in any product including, but not limited to, any claims for loss of profits.

Register now at www.generaltools.com/ProductRegistry to receive a 60-day extension to your warranty.

RETURN FOR REPAIR POLICY

Every effort has been made to provide you with a reliable product of superior quality. However, in the event your instrument requires repair, please contact our Customer Service to obtain an RGA (Return Goods Authorization) number before forwarding the unit via prepaid freight to the attention of our Service Center at this address:

General Tools & Instruments
80 White Street
New York, NY 10013
212-431-6100

Remember to include a copy of your proof of purchase, your return address, and your phone number and/or e-mail address.

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DMM570 User's Manual

Specifications subject to change without notice

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MAN# DMM570
2/14/14